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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HOM, SHICK C

ART UNIT PAPER NUMBER

2666

DATE MAILED: 03/11/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/511,242

Applicant(s)

NARVINGER ET AL.

Examiner

Shick C Hom

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 9, 11, 25, 26, 30 and 31 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 10 is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-24 and 27-29 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments filed 12/19/03 have been fully considered but they are not persuasive.

In page 13 line 12 to page 14 line 14 of the amendment applicant argued that while the 3GPP TS25. V2.2.0 reference discloses a transmission gap length defined by a reduced spreading factor it fails to disclose or suggest the used of increased redundancy of information bits to be transmitted and further it teaches away from the invention because it uses puncturing as shown in Table 14 which is the opposite of increased redundancy is not persuasive. While examiner agrees that V2.2.0 teach puncturing, examiner did not rely on puncturing nor Table 14 as being corresponding to the claim limitation of increased redundancy of information bits because V2.2.0 teach the use of puncturing merely as another technique to produce the gap, i.e. instead of using reduced spreading factor. Fig. 15, Table 10, and page 37 paragraph 4.3.3.2 which shows and recites the bit repetition in the slots of the transmission frame and paragraph 4.2.7 which recites the rate matching technique where bits are either repeated or punctured,

i.e. deleted, by calculating the  $\Delta N$  for uplink and downlink and if positive, then the number of bits should be repeated and if negative, then the number of bits should be punctured clearly anticipate the used of increased redundancy of information bits to be transmitted as claimed. Likewise, applicant's argument in page 14 line 18 to page 15 line 11 is not persuasive for the reasons above.

#### ***Drawings***

2. The drawings were received on 12/19/03. These drawings are approved by the Examiner.

#### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-6, 12-24, and 27-29 are rejected under 35

U.S.C. 102(a) as being anticipated by 3GPP TS25.212 V2.2.0.

Regarding claim 1:

3GPP TS25.212 V2.2.0 discloses the method of transmitting a code division multiple access frame in a cellular communications network (Figs. 1, 2, and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document), the method comprising the steps of: providing the CDMA frame so as to include a plurality of slots and at least a portion of a transmission gap (see the frame including the slots in Fig. 12 and the transmission gap in Figs. 16 and 20); defining the transmission gap using both a reduced spreading factor and increased redundancy of information bits to be transmitted (see the method of transmission time reduction pages 39-40 paragraph 4.4.2 including the reduction of the spreading factor, paragraph 4.4.2.3 and see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of

the frame and paragraph 4.2.7 which recites the rate matching technique where bits are either repeated or punctured, i.e. deleted, by calculating the  $\Delta N$  for uplink and downlink and if positive, then the number of bits should be repeated and if negative, then the number of bits should be punctured); and transmitting the frame, including the plurality of slots, on a channel (Figs. 1-2).

Regarding claim 12:

3GPP TS25.212 V2.2.0 discloses the method of transmitting a compressed mode frame in a communications network (see Fig. 16 and page 38 paragraph 4.4), comprising: forming the frame including a plurality of slots and a transmission gap of length TGL (see the frame including the slots in Fig. 12 and the transmission gap in Figs. 16 and 20); increasing a bit or code rate to form the transmission gap and create room for redundant format indicator bits (see the method of transmission time reduction by rate matching (puncturing as in page 39 paragraph 4.4.2.1); and repeating a number of format indicator bits from a first slot in the frame in a second slot of the frame (Fig. 20 shows the second frame).

Regarding claim 16:

3GPP TS25.212 V2.2.0 discloses the apparatus for transmitting a code division multiple access frame from a mobile station to a base station in a cellular communications network (Figs. 1, 2, and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document), the apparatus comprising: means for forming the frame so that the frame includes a plurality of time slots and at least a portion of a transmission gap (see the frame including the slots in Fig. 12 and the transmission gap in Figs. 16 and 20); means for forming the transmission gap having a transmission gap length in the frame by using a reduced spreading factor and an increased redundancy of information bits to be transmitted (see the method of transmission time reduction pages 39-40 paragraph 4.4.2 and Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame); and a transmitter for transmitting the frame from the mobile station to the base station (Figs. 1-2).

Regarding claim 18:

3GPP TS25.212 V2.2.0 discloses the apparatus for transmitting an uplink compressed mode frame in a CDMA based communications network (Figs. 1, 16 and page 38 paragraph 4.4),

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the apparatus comprising: means for forming the uplink compressed mode frame so as to include a plurality of slots and a transmission gap of length TGL (Fig. 16 and page 38 paragraph 4.4); means for repeating a number of format indicator bits from a first slot in the frame in a second slot of the frame; and wherein the format indicator bits to be repeated are determined at least in part based upon at least one of the length of the transmission gap (see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame), and a location of the transmission gap (Fig. 20 shows the second frame and page 41 paragraph 4.4.3.2 describes the compressed-mode sequence of alternating transmission gap patterns using the parameters in Table 14 to define the sequence).

Regarding claims 19 and 23:

3GPP TS25.212 V2.2.0 discloses the apparatus for transmitting a spread spectrum frame or the mobile station for used in a cellular communications network (Figs. 1, 2, and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document), the apparatus or the mobile station comprising: a spreading circuit for spreading bits to a bit rate using a code with a reduced



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spreading factor and including the spread bits in the frame which includes a plurality of time slots and a transmission gap therein (Figs. 20 and 16 show the transmission gap in the frames and page 41 paragraph 4.4.3.2 describes the compressed-mode sequence of alternating transmission gap patterns using the parameters in Table 14 to define the sequence including the spreading factor); and a rate match at least partially defining a length of the transmission gap using increased redundancy of at least some of the bits (page 39 paragraphs 4.4.2.1-4.4.2.2).

Regarding claim 27:

3GPP TS25.212 V2.2.0 discloses the method of transmitting a compressed mode frame in a communications network, comprising the steps of: forming the frame including a plurality of slots and a transmission gap of length TGL (see the frame including the slots in Fig. 12 and the compressed mode frame transmission gap in Figs. 16 and 20); and repeating a number of control bits from a first slot in the frame in a second slot of the frame in order to increase redundancy of control bits (see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 2:

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3GPP TS25.212 V2.2.0 discloses wherein said transmitting step comprises transmitting the frame on an uplink from a mobile station to a base station in the network (see Fig. 1 and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document).

Regarding claim 3:

3GPP TS25.212 V2.2.0 discloses wherein the channel is a dedicated physical data channel (see Fig. 1).

Regarding claim 4:

3GPP TS25.212 V2.2.0 discloses wherein the transmission gap is located between first and second slots in the frame (see Figs. 19-20).

Regarding claim 5:

3GPP TS25.212 V2.2.0 discloses reducing the spreading factor by a factor of two, and increasing the redundancy of information bits to be transmitted so that the transmission gap length is less than a length of half the frame (page 40 paragraph 4.4.2.3).

Regarding claim 6:

3GPP TS25.212 V2.2.0 discloses wherein the frame is a radio frame comprising fifteen time slots (Fig. 15 shows the radio frame having fifteen time slots).

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Regarding claim 13:

3GPP TS25.212 V2.2.0 discloses determining which format indicator bits are to be repeated based at least in part upon the location of the transmission gap, and wherein the frame is transmitted on either an uplink or downlink channel (Figs. 1-2, Fig. 20, Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 14:

3GPP TS25.212 V2.2.0 discloses repeating format indicator bits from the first slot which is located immediately following the transmission gap, in the second slot which is located proximate an end of the frame (see Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

Regarding claim 15:

3GPP TS25.212 V2.2.0 discloses wherein the format indicator bits are Transport Format combination Indicator TFCI bits, and wherein the frame is transmitted on an uplink physical control channel (Fig. 1 and Fig. 15, Table 10 and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

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Regarding claim 17:

3GPP TS25.212 V2.2.0 discloses wherein said means for formatting the transmission gap comprises a spreading circuit and a rate matching circuit (pages 30-40 paragraph 4.4.2).

Regarding claim 20:

3GPP TS25.212 V2.2.0 discloses wherein the spread spectrum frame is a CDMA frame, and wherein the transmission gap is located between first and second slots of the frame (Figs. 19-20 and page 7 paragraph 3.3. which recite use of DS-CDMA in the document).

Regarding claim 21:

3GPP TS25.212 V2.2.0 discloses the transmitter for transmitting the frame in an uplink from a mobile station to a base station in the cellular communications network (Fig. 1 and page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document).

Regarding claim 22:

3GPP TS25.212 V2.2.0 discloses wherein the length of the transmission gap is variable via said rate match (pages 39-40 paragraphs 4.4.2.1 and 4.4.2.2).

Regarding claim 24:

3GPP TS25.212 V2.2.0 discloses wherein said mobile station is a cellular phone (page 7 paragraph 3.3 which recite the mobile station MS, base station BS, and DS-CDMA communication recited in the document).

Regarding claim 28:

3GPP TS25.212 V2.2.0 discloses transmitting the frame on either an uplink or downlink (Figs. 1 and 2).

Regarding claim 29:

3GPP TS25.212 V2.2.0 discloses determining which control bits are to be repeated based at least in part upon the location of the transmission gap in the frame, and wherein the control bits are at least one of Transport Power Control TPC bits, Transport Format Combination Indicator TFCI bits, and pilot bits (see page 38 paragraph 4.4.1, Fig. 15, Table 10, and page 37 paragraph 4.3.3.2 on mapping of Transport Format Combination Indicator TFCI words being repeated in the slots of the frame).

***Allowable Subject Matter***

6. Claims 8 and 10 are allowed.

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7. Claim 7 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

**Conclusion**

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks

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Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications;  
please mark "EXPEDITED PROCEDURE")

Or:

(for informal or draft communications, please  
label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal  
Park II, 2121 Crystal Drive, Arlington. VA., Sixth  
Floor (Receptionist).

Any inquiry concerning this communication or earlier  
communications from the examiner should be directed to Shick Hom  
whose telephone number is (703) 305-4742. The examiner's  
regular work schedule is Monday to Friday from 8:00 am to 5:30  
pm EST and out of office on alternate Friday.

If attempts to reach the examiner by telephone are  
unsuccessful, the examiner's supervisor, Seema Rao, can be  
reached at (703) 308-5463.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



DANG TON  
PRIMARY EXAMINER

SH

March 5, 2004